

AMENDMENTS TO THE CLAIMS

1.-9. (Canceled)

10. (Currently Amended) A hair treatment-method comprising:

selecting a pulse width, wavelength and fluence of electromagnetic radiation (EMR) to modify hair tips based on skin type or hair color, the selected pulse width being in a range of about 1 microsecond to about 100 milliseconds, the selected wavelength being in a range of about 360 nm to less than 600 nm and the selected fluence in a range of about 0.1 J/cm² to about 5 J/cm²; and

applying one or more EMR electromagnetic radiation (EMR) pulses of the selected pulse width, wavelength and fluence each having a pulse width in a range of about 1 microsecond to about 100 milliseconds and a wavelength in a range of about 360 nm to less than 600 nm to a skin treatment area to deposit energy in one or more hair tips in the area so as to cause heating of at least a portion of said hair tips so as to modify a shape of at least a portion of said hair tips without removing the respective hairs and without damaging the skin underlying the hair tips, the EMR applied to the respective hairs being less than necessary to remove the respective hairs, so as to prevent, reduce, or treat pseudofolliculitis barbae (PFB) in the skin treatment area, wherein said EMR applies a fluence in a range of about 0.1 J/cm² to about 5 J/cm² to said treatment area.

11. (Canceled)

12. (Original) The method of claim 10, wherein said applied radiation causes heating of said hair tips so as to reduce sharpness of said tips.

13. (Original) The method of claim 10, wherein said applied radiation modifies the shape of said hair tips to a substantially rounded shape.

14. (Original) The method of claim 10, wherein said applied radiation modifies the shape of said hair tips so as to inhibit extrafollicular and/or transfollicular penetration of said hair tips.

15. (Canceled)

16. (Original) The method of claim 10, wherein said applied radiation raises temperature of said hair tips to a range of about 50 to about 300 °C.

17. (Original) The method of claim 10, further comprising selecting said applied radiation so as to raise temperature of said hair tips to a range of about 50 to about 300 °C while keeping epidermal temperature in the treatment area below about 65 °C.

18. (Canceled)

19. (Canceled)

20. (Currently Amended) The method of claim [[19]]10, wherein said pulses have a repetition rate ranging from about 0.1 Hz to about 1 MHz.

21-23. (Canceled)

24. (Original) The method of claim 10, wherein said applied radiation includes wavelength components absorbed by at least one of melanin, water, and keratin in said hair tips.

25. (Original) The method of claim 10, further comprising drying hair tips in the treatment area prior to said application of the electromagnetic radiation.

26. (Original) The method of claim 25, further comprising delivering a flow of air over said treatment area to dry said hair tips.

27. (Original) The method of claim 10, further comprising the step of cooling the epidermis in the treatment area.

28. (Original) The method of claim 27, wherein said cooling step is performed at any of prior, during or after application of said radiation to the treatment area.
29. (Original) The method of claim 10, further comprising applying a topical agent to said skin treatment area, said topical agent being photoactivated chemically or thermally by said radiation to facilitate modifying the shape of the hair tips.
30. (Original) The method of claim 29, wherein said topical agent comprises at least one chromophore.
31. (Original) The method of claim 30, wherein said topical agent comprises a vehicle for delivering said chromophore to the pilosebaceous canal of hairs in said treatment area.
32. (Original) The method of claim 10, wherein said hair tips extend from about 0.2 mm below the skin surface to about 1 mm above the skin surface.
33. (Original) The method of claim 10, further comprises removing portions of hair tips protruding above the skin surface prior to applying said radiation.
34. (Original) The method of claim 33, wherein said step of removing portions of hair tips is performed substantially simultaneously with applying said electromagnetic radiation.
35. (Original) The method of claim 33, wherein the step of removing portions of the hair tips is selected from the group consisting of shaving, clipping, applying a depilatory cream, or applying additional electromagnetic radiation.
36. (Original) The method of claim 10, wherein the method further comprises stretching the skin treatment area.
37. (Original) The method of claim 10, wherein the method further comprises lifting hairs in the skin treatment area.

38. (Currently Amended) A method of treating hair, comprising:
selecting a wavelength and pulse width of electromagnetic radiation to cause a change in elasticity of hair shafts based on skin type or hair color, the selected wavelength being in a range of about 1350 nm to about 2700 nm and the selected pulse width being in a range of about 1 microsecond to about 100 milliseconds;
applying at least one electromagnetic radiation pulse having the selected wavelength and pulse width one or more wavelength components in a range of about 1350 nm to about 2700 nm and a pulse width in a range of about 1 microsecond to about 100 milliseconds to a skin treatment area to deposit energy in one or more hair shafts in the treatment area so as to cause a change in elasticity of said hair shafts without removing the respective hairs, the electromagnetic radiation applied to the one or more hair shafts being less than necessary to remove the respective hair shafts, so as to prevent, reduce, or treat pseudofolliculitis barbae (PFB) in the skin treatment area.

39. (Original) The method of claim 38, wherein said radiation increases elasticity of said irradiated hair shafts.

40. (Original) The method of claim 38, wherein said radiation causes a change in a tensile strength of said hair shafts in a range of about 1 to about 200 MPa of breaking stress.

41. (Original) The method of claim 38, wherein said radiation causes substantial straightening of said hair shafts.

42. (Canceled)

43. (Currently Amended) The method of claim 38, wherein said radiation elevated raises a temperature of said hair shafts to is in a range of about 50 °C to about 300 °C.

44. (Original) The method of claim 38, wherein said step of applying electromagnetic radiation comprises applying a plurality of electromagnetic pulses to said treatment area.

45-47. (Canceled)

48. (Previously Presented) The method of claim 38, wherein said electromagnetic radiation applies a fluence in a range of about 0.1 J/cm² to about 1000 J/cm².

49. (Original) The method of claim 44, further comprising cooling the epidermis in said treatment area.

50. (Original) The method of claim 44, further comprising applying a topical agent to said treatment area, said topical agent being capable of photoactivation by said radiation to facilitate softening of the hair shafts.

51. (Currently Amended) A method of controlling hair growth, comprising:
selecting a wavelength and pulse width of electromagnetic radiation based on skin type or hair color, the selected wavelength being in a range of about 1200 nm to about 1400 nm and the selected pulse width being in a range of about 1 microsecond to about 100 milliseconds;
applying electromagnetic radiation pulses of the selected wavelength and pulse width having one or more wavelength components in a range of greater than 1200 to about 1400 nm and a pulse width in a range of about 1 microsecond to about 100 milliseconds to one or more hair follicles in a skin treatment area without removing so as to modulate hair growth, and prevent, reduce, or treat pseudofolliculitis barbae (PFB) in the skin treatment area, the radiation applied to the one or more hair follicles being less than necessary to remove the respective hair shafts.

52. (Original) The method of claim 51, wherein said applied radiation causes a deceleration of hair growth.

53. (Original) The method of claim 51, wherein said applied radiation causes a cessation of hair growth.

54. (Original) The method of claim 51, wherein said applied radiation causes a stimulation of hair growth.

55. (Canceled)

56. (Previously Presented) The method of claim 51, further comprising selecting a fluence of said applied radiation to be in a range of about 0.1 J/cm^2 to about 1000 J/cm^2 .

57. (Original) The method of claim 51, wherein the step of applying radiation comprises exposing the skin treatment area to a plurality of radiation pulses having pulse widths in a range of about 1ns to about 1000s.

58. (Original) The method of claim 51, further comprising the step of cooling the epidermis in the treatment area.

59. (Original) The method of claim 51, further comprising selecting duration and fluence of said applied radiation so as to cause heating of at least a portion of said hair follicles.

60. (Currently Amended) A method of treating hair, comprising
selecting a wavelength, pulse width, and fluence of electromagnetic radiation to decrease a curliness of hair based on skin type or hair color, the selected wavelength being in a range of about 380 nm to less than 600 nm, the selected pulse width being in a range of about 1 microsecond to about 100 milliseconds, and the selected fluence being in a range of about 0.1 J/cm² to about 5 J/cm²;

irradiating a plurality of hair follicles in a treatment area with radiation of [[a]] the selected wavelength, pulse width, and fluence suitable for decreasing to decrease a curliness of at least a portion of said the hairs without removing the hairs, so as to prevent, reduce, or treat pseudofolliculitis barbae (PFB) in the skin treatment area,

wherein said wavelength is selected to be in a range of about 380 nm to 600 nm, said

~~pulse width is in a range of about 1 microsecond to about 100 milliseconds, and said fluence is in a range of about 0.1 J/cm² to about 5 J/cm².~~

61. (Original) The method of claim 60, wherein said irradiated portion of the hair follicles comprises at least one of the hair bulb, keratogenous zone and bulbar of the hair follicles.

62. (Original) The method of claim 60, wherein said radiation causes the hair matrix to effect growth of thinner hair.

63. (Original) The method of claim 60, wherein said hair having reduced curliness exhibits a change in a tensile strength in a range of about 1 to about 200 MPa of breaking stress relative to that of a pre-treatment hair.

64. (Original) The method of claim 60, wherein said hair having reduced curliness exhibits a reduction in diameter in a range of about 1 to about 60 micrometers relative to that of a pre-treatment hair.

65-67. (Canceled)

68. (Original) The method of claim 60, wherein said irradiating step comprises applying a plurality of electromagnetic pulses to said treatment area.

69. (Canceled)

70. (Canceled)

71. (Previously Presented) The method of claim 38, wherein said electromagnetic radiation applies a fluence in a range of about 0.1 J/cm² to about 5 J/cm² to said treatment area.

72. (Previously Presented) The method of claim 51, further comprising selecting a fluence of said applied radiation to be in a range of about 0.1 J/cm² to about 5 J/cm².

73. (Cancelled)

74. (Currently Amended) A hair treatment method comprising:

selecting a wavelength of electromagnetic radiation (EMR) to modify a shape of hair tips based on skin type or hair color, the selected wavelength being in a range of about 360 nm to less than 600 nm;

~~applying electromagnetic radiation (EMR) EMR of the selected wavelength in a range of about 360 nm to less than 600 nm to a skin treatment area to deposit energy in one or more hair tips in the area to raise the temperature of said hair tips to a range of about 50 to about 300 °C so as to modify a shape of at least a portion of said hair tips without removing the respective hairs and without damaging the skin underlying the hair tips, the EMR applied to the respective hairs being less than necessary to remove the respective hairs, so as to prevent, reduce, or treat pseudofolliculitis barbae (PFB) in the skin treatment area.~~

75. (Currently Amended) The method of claim 74, wherein said step of applying EMR ~~radiation~~ comprises exposing at least a portion of said treatment area to a plurality of EMR pulses.

76. (Previously Presented) The method of claim 75, wherein said pulses have pulse widths between about 1 microsecond to about 100 milliseconds.

77. (Previously Presented) The method of claim 74, wherein said EMR applies a fluence in a range of about 0.1 J/cm² to about 5 J/cm² to said treatment area.

78. (Previously Presented) The method of claim 74, further comprising cooling the epidermis in the treatment area.

79. (Previously Presented) The method of claim 78, further comprising maintaining the epidermal temperature in the treatment area below about 65 °C.